

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

MONOLITHIC POWER SYSTEMS, INC., a  
Delaware corporation,

Plaintiff,

v.

REED SEMICONDUCTOR CORP., a  
Delaware corporation,

Defendant.

**C.A. No.: 23-1155-RGA**

**JURY TRIAL DEMANDED**

**FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Monolithic Power Systems, Inc. (“MPS” or “Plaintiff”) files this First Amended Complaint against Defendant Reed Semiconductor Corp. (“Reed” or “Defendant”) and hereby alleges as follows:

**THE NATURE OF THE ACTION**

1. This is a civil action for patent infringement.
2. MPS is a world leader in the design, development, manufacture, and sale of semiconductor products, including power management solutions such as power converters, that are needed to power many everyday electronic devices like smart phones and laptop computers. Founded in 1997, MPS has achieved significant growth year over year and great financial success due to its unmatched technical innovation and ability to offer high-performance products that are used in consumer electronics, automotive, communications, and storage products. MPS’s mission is to reduce total energy consumption in its customers’ systems with practical, energy-efficient solutions. To continue to innovate, MPS has invested significant resources to develop a large patent portfolio covering its semiconductor products, including its power conversion products.

3. Defendant Reed competes directly against MPS for customers of power conversion products, including products that are designed for the same applications as MPS's products.

4. Defendant has infringed and continues to infringe MPS's U.S. Patent No. 9,590,608 ("the '608 Patent" or "the MPS Patent") related to power conversion, a copy of which is attached hereto as Exhibit 1. Defendant has infringed and continues to infringe the MPS Patent by: making, using, selling, offering for sale, and/or importing into the United States infringing components and components specially made for use in an infringing device; and inducing others to do the same.

### **THE PARTIES**

5. Monolithic Power Systems, Inc. is a corporation organized and existing under the laws of Delaware, having its principal place of business at 5808 Lake Washington Boulevard NE, Kirkland, WA 98033.

6. Upon information and belief, Reed is a corporation organized and existing under the laws of Delaware with its principal place of business at 875 Centerville Road, Warwick, RI 02886.

### **SUBJECT MATTER JURISDICTION**

7. This court has subject matter jurisdiction over the patent infringement claims asserted in this case under 28 U.S.C. §§ 1331 and 1338(a).

### **PERSONAL JURISDICTION, VENUE, AND JOINDER**

8. This Court has personal jurisdiction over Defendant Reed as a citizen/resident of Delaware. On information and belief, the Court further has personal jurisdiction over Reed, because Reed has regularly conducted and continues to conduct business in the United States, in the State of Delaware, and in this judicial district. On information and belief, Reed has committed infringing activities in Delaware and in this judicial district by making, using,

offering for sale, and/or selling in the United States and/or importing into the United States, products and systems that infringe upon the MPS Patent, or by placing such infringing products and systems into the stream of commerce with the awareness, knowledge, and intent that they would be used, offered for sale, or sold by others in this judicial district and/or purchased by consumers in this district.

9. Venue is proper as to Reed pursuant to 28 U.S.C. §§ 1391(b) and 1400(b) because it is a citizen/resident of Delaware and has committed, and continues to commit, acts of infringement in this District.

### **THE MPS PATENT**

10. On March 7, 2017, the U.S. Patent and Trademark Office duly and legally issued U.S. Patent No. 9,590,608 (“the ’608 Patent”), entitled “Bootstrap Refresh Control Circuit, Voltage Converter and Associated Method,” listing Li Xu as the inventor, from a patent application filed August 11, 2015. The ’608 Patent claims priority from China Patent Application, No. 20141039070.8, filed on August 11, 2014. A true and correct copy of the ’608 Patent is attached hereto as Exhibit 1 and incorporated herein by reference.

11. The ’608 Patent is also referred herein to as the “MPS Patent.”

12. MPS exclusively owns all rights, title, and interest in the MPS Patent necessary to bring this action, including the right to recover past and future damages.

13. Reed is not currently licensed to practice the MPS Patent.

14. The MPS Patent is valid and enforceable.

### **FACTUAL BACKGROUND**

15. Monolithic Power Systems, Inc. (“MPS”) was founded in 1997 by Michael Hsing in Los Gatos, California, USA.

16. Since its founding, MPS has become an industry-leading fabless semiconductor company that designs, develops, markets, and sells semiconductor products, including power conversion products.

17. MPS has achieved significant growth year over year and great financial success due to its unmatched technical innovation. MPS has a large patent portfolio covering its semiconductor products including its power conversion products. MPS marks the products practicing its patents by, among other things, noting such products are “patent protected” on the datasheets that MPS provides to its customers and potential customers.

18. MPS’s power conversion products are used and incorporated into a wide range of electronic devices that require varying levels of power. MPS offers a large portfolio of Power Management buck/stepdown converters, boost/step-up converters, buck/boost converters, and flyback converters. By combining a power-optimized IC process, packaging technology, monolithic design and system expertise, MPS provides high-efficiency, small-sized power management products. These products are easy to use with either built-in trim options for adjustability or software (digital) programmability for many key features.

19. MPS’s buck converter family offers input ranges from 2V to 100V and output current up to 30A. With a wide input voltage range, MPS products are used in all kinds of applications and support a variety of bus voltages. MPS’ boost and buck/boost converter family offers input ranges from 0.6V to 36V, output ranges from 1.8V to 55V, and switch current limit up to 22A.

20. MPS has been awarded numerous U.S. patents for the electronic components it has developed, recognizing MPS’s groundbreaking research and innovation.

21. The MPS Patent are just one example of MPS's work on the cutting-edge of electronic component design.

22. The MPS Patent describes a voltage converter with a bootstrap refresh control circuit monitoring the bootstrap voltage across the bootstrap capacitor and providing a high side driving signal to the high side which of the voltage converter. Further, the bootstrap refresh control circuit can also control the charging of the bootstrap, thus preventing the converter from running in an abnormal condition because of the bootstrap voltage dropping.

### **REED'S INFRINGEMENT**

23. Reed has directly and indirectly infringed, and continues to infringe, one or more claims of the MPS Patent through making, using, offering for sale, and/or selling in the United States and/or importing into the United States, products and systems that infringe upon the MPS Patent (i.e., the Reed Accused Products), and inducing others to do the same, including Reed's downstream customers.

24. "Reed Accused Products" are step-down converter products accused of meeting the claim limitations of the MPS Patent. Reed designs and manufactures power converters that infringe the MPS Patent in the United States. The infringing converters have applications in many types of devices designed and manufactured by Reed's customers, including various electronic devices. The "Reed Accused Products" also include evaluation boards that have Reed step-down converter products implemented by Reed on a systems-level board in combination with other necessary electronic components, that Reed makes, uses, offers for sale, sells and/or imports to its customers in the United States, for their evaluation of Reed's step-down converter products, as part of the design-in process.

25. Exhibit 2, demonstrating how exemplary Reed Accused Products meet the claim limitations of the MPS Patent, is incorporated herein by reference.

26. Reed sells Reed Accused Products both directly through its own sales force and website, and indirectly through distributors such as Digipart.

27. The Reed Accused Products are available for direct purchase from the Reed website.—Reed directly assists its customers with purchasing the Reed Accused Products, once interested customers contact Reed through its website either by chat or the inquiry form.

28. Further, in concert with its distributors and customers, Reed causes or induces infringing accused products to be made, used, offered to be sold, sold within the United States, or imported into the United States.

29. Upon information and belief, in concert with contract manufacturers, suppliers, and/or assembly facilities, Reed sells all or a substantial portion of the components of products that practice the claimed inventions, or components of the claimed inventions especially made or especially adapted for the use in the claimed invention, in the form of a finished electronic device.

30. Upon information and belief, Reed actively induces the combination of such components into a product that practices the claimed inventions, and/or knowingly sells one or more components of MPS's patented inventions intending those components to be combined in a manner that infringe the MPS Patent.

31. Specifically, Reed has designed and continues to design and manufacture power converters that practice the MPS Patent, whether alone, or in combination with other components in a finished electronic device. The Reed Accused Products include, as non-limiting examples, products identified in Exhibit 2.

32. Further, upon information and belief, Reed sells at least one component, specifically designed for use in a patented invention to contract manufacturers. Those contract manufacturers then assemble the components received from Reed into infringing products.

33. Upon information and belief, these infringing products are then sold to Reed's branded customers, who incorporate the Reed Accused Products into their products, which are finished electronic devices. Reed actively induces such infringement by providing datasheets and other technical and marketing materials that actively encourage Reed's customers to incorporate and implement the Reed Accused Products in an infringement manner. Reed's customers' products are then imported into and sold in the United States.

34. Upon information and belief, Reed has had knowledge of the MPS Patent since its issuance, because, as an active competitor to MPS, Reed would have periodically investigated MPS's patent portfolio.

35. Reed has knowledge of the MPS Patent at least as of the filing of this complaint.

36. Reed's infringement has been and continues to be willful.

37. As shown in Exhibit 2, the exemplary Reed RS53317 sync step-down converter infringes at least one claim of the MPS Patent.

38. Upon information and belief, Reed designs and manufactures many different power converter devices using similar designs, many or all of which utilize MPS's protected intellectual property.

39. Upon information and belief, the Reed power converter devices are in relevant part substantially similar to the exemplary Reed RS53317 sync step-down converter shown in Exhibit 2. Exhibit 2 is thus illustrative of the manner in which the Reed Accused Products meet the claim limitations of the MPS Patent.

**COUNT I: INFRINGEMENT OF U.S. PATENT NO. 9,690,608**

40. MPS incorporates by reference and re-alleges all of the foregoing paragraphs of this Complaint and exhibits attached hereto as if fully set forth herein.

41. The following allegations are based on publicly available information and a reasonable investigation of the structure and operation of the Reed Accused Products. MPS reserves the right to modify this description, including, for example, on the basis of information about the Reed Accused Products that it obtains during discovery.

42. Reed's infringement has damaged and continues to damage MPS in an amount yet to be determined, of at least a reasonable royalty.

43. Reed has directly infringed the '608 Patent under 35 U.S.C. § 271(a). As alleged above and in Exhibit 2, the Reed Accused Products including the exemplary product analyzed in Exhibit 2 meet each and every one of the claim limitations of at least one claim of the '608 Patent.

44. As alleged above, the products analyzed in Exhibit 2 are exemplary of the Reed Accused Products.

45. As alleged above, Reed has infringed and continues to infringe at least one claim of the '608 Patent by making, using, offering to sell, selling within the United States, and importing into the United States, Reed Accused Products. Defendant's infringement is and continues to be willful.

46. As alleged above, Defendant has actively induced infringement under 35 U.S.C. § 271(b) of at least one claim of the '608 Patent. Specifically, Reed understands, intends, and encourages its products to be incorporated into infringing downstream electronic products developed by Reed's customers. Reed sells the Reed Accused Products to customers, either directly or indirectly, knowing and intending that the Reed Accused Products will be implemented

in an infringing manner as described in Reed's datasheets. In fact, Reed actively encourages such infringement by using its datasheets and other technical and marketing materials to inform downstream customers how to incorporate the Reed Accused Products in infringing manner. Reed works directly with its customers to help them develop products that infringe with full knowledge of such infringement. Reed's customer's products are manufactured by contract manufacturers, and then imported into the U.S. and/or sold throughout the U.S. by Reed's downstream customers and their retailers.

47. As alleged above, Defendant has actively contributed to infringement under 35 U.S.C. § 271(c) of at least one claim of the '608 Patent, because the Reed Accused Products constitute a material part of the infringing functionality of the '608 Patent, and are knowingly made by Reed for use in an infringing downstream product. The Reed Accused Products are not a staple article or commodity of commerce suitable for substantial noninfringing use because the datasheets and other technical and marketing materials created by Reed for those products confirm that they must be implemented in a downstream device in an infringing manner. Reed's customer's products are manufactured by contract manufacturers, and then imported into the U.S. and/or sold throughout the U.S. by Reed's downstream customers and their retailers.

48. Reed's infringement has damaged and continues to damage MPS in an amount yet to be determined, of at least a reasonable royalty.

49. As a consequence of Reed's infringement of the '608 Patent, MPS has suffered and will continue to suffer irreparable harm and injury, for example, in the form of lost sales, lost profits and loss of market share. Unless enjoined, Defendant and/or others acting on behalf of Defendant will continue their infringing acts, thereby causing additional irreparable injury to MPS

for which there is no adequate remedy at law. Specifically, Defendant's actions will irreparably harm MPS's position in the power converter market by causing MPS to lose customers.

**DAMAGES**

50. As a result of Reed's acts of infringement, MPS has suffered and continues to suffer actual and consequential damages. However, MPS does not yet know the full extent of the infringement and the amount of damages cannot be ascertained except through discovery and special accounting. To the fullest extent permitted by law, MPS seeks recovery of damages at least for reasonable royalties, lost profits, unjust enrichment, and benefits received by Reed as a result of using the patented technology. MPS further seeks any other damages to which MPS is entitled under law or in equity, including enhanced damages for Reed's willful infringement.

**DEMAND FOR JURY TRIAL**

51. MPS hereby demands a jury trial for all issues so triable.

**PRAYER FOR RELIEF**

WHEREFORE, MPS respectfully requests that this Court enter judgment in its favor as follows:

A. That Judgment be entered that Defendant has infringed one or more claims of the MPS Patent, literally and under the doctrine of equivalents;

B. That, in accordance with 35 U.S.C. § 283, Defendant and all its affiliates, employees, agents, officers, directors, attorneys, successors, and assigns and all those acting on behalf of or in active concert or participation with any of them, be preliminarily and permanently enjoined from (1) infringing the MPS Patent and (2) making, using, selling, and offering for sale, or importing into the United States, and (3) exporting from the United States one or more components of, the Reed Accused Products;

- C. That MPS be awarded damages sufficient to compensate MPS for Defendant's infringement and enhanced damages under 35 U.S.C. § 284; including an accounting of lost sales not presented at trial and an award of additional damages for any such lost sales;
- D. That the case be found exceptional under 35 U.S.C. § 285 and that MPS be awarded its reasonable attorneys' fees;
- E. That MPS be awarded its costs and expenses in this action;
- F. That MPS be awarded damages for pre-issuance infringement under 35 U.S.C. § 154(d);
- G. That MPS be awarded prejudgment and post-judgment interest; and
- H. Such other and further relief as the Court may deem just and proper.

ASHBY & GEDDES

*/s/ John G. Day*

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